

Low Power X-Ray Photon Resolving Imaging Array, Phase II

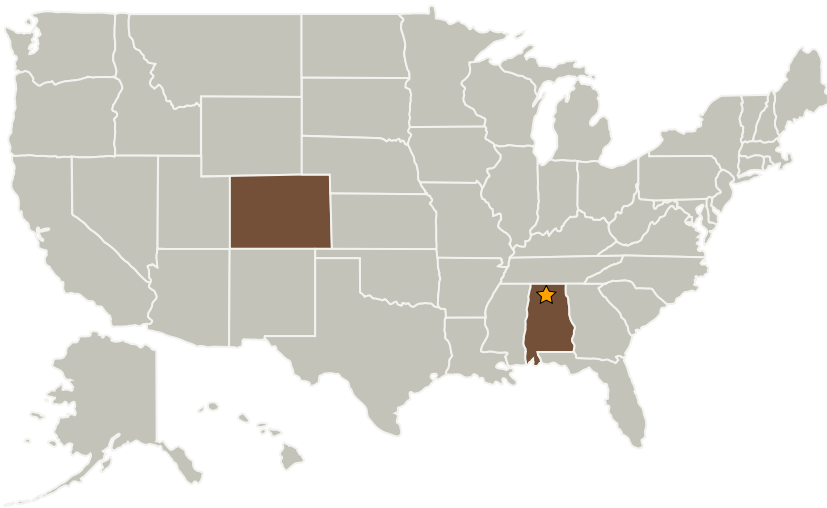
Completed Technology Project (2009 - 2011)



Project Introduction

The solid-state detector array is the primary technology to implement the current generation of space borne high-energy astronomy missions that are managed by NASA in partnership with the international community. Readout integrated circuitry (ROIC) specifically designed for photon resolving X-ray detection with solid-state detectors will create a new generation of high-performance X-ray imaging sensors. AC sensitive detector input circuitry, similar to that used by Black Forest Engineering (BFE) for laser detection and ranging (LADAR), is ideally suited to NASA X-ray astronomy imaging system requirements. BFE proposes on Phase II to produce and test 32x32 hybrid sensor arrays that can meet a wide range of NASA X-ray imaging applications. The arrays will provide single photon sensitivity, accurate X-ray energy determination, X-ray event time stamping, low power dissipation and ambient temperature operation.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Marshall Space Flight Center (MSFC)	Lead Organization	NASA Center	Huntsville, Alabama
Black Forest Engineering, LLC	Supporting Organization	Industry	Colorado Springs, Colorado



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Marshall Space Flight Center (MSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations

Alabama

Colorado

Project Transitions



February 2009: Project Start



November 2011: Closed out

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.1 Remote Sensing Instruments/Sensors
 - └ TX08.1.1 Detectors and Focal Planes